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MAXIMIZING RESOURCES UTILIZATION IN INSTITUTIONS OF HIGHER LEARNING IN AFRICA: THE CASE OF SWAZILAND

Aims and Purposes of a University.

While the study includes the Swaziland College of Technology (SCOT) it is primarily oriented towards the University.

In carrying out the tasks spelt out in the terms of reference of this work it became necessary to briefly reflect on the main goals or functions of a university. It is necessary to see how these are being pursued in Swaziland and the likely impact on these of some changes either in terms of increasing numbers of students or introducing curricular variations such as working while learning and learning while working.

Various commissions around the world have spelt out, in the context of different countries, what the purpose of higher education is.

In the United Kingdom the Robbins Committee on Higher education reporting in 1963 stated that higher education has four main functions: higher level vocational training, promotion of the general powers of thinking, the acquisition of new knowledge and the guardianship of the national cutlure 1/.

The Carnegie Commission in the United States of America took the veiw that education was for (1) developing and making available new ideas and new technology, (2) finding and training talent and guiding it to greater usefulness, and (3) generally enhancing the information, the understanding and the cultural appreciation and opportunities of the public at large 2/.

The socialist countries emphasize the integration of economic and social life. Close ties exist between the studies carried on at higher educational institutions on the one hand and research and the practice of economic construction on the other. Practical work is included as an organic element of the curricula.

For the purposes of this study the goals of the university include the following (some are restatements of the above) 3/:

The development of a more educated populace

1. This goal is pursued through the provision - on a wide basis - of undergraduate programmes designed to provide a general education. The major aim being to promote the growth of knowledge, understanding and judgement in the individual student and so increase awareness, perception enlightenment and a general sense of social responsibility. Such programmes may or may not be designed to lead to specific jobs.

2. To educate and train people for the professions. This goal is not incompatible with (1) above. However, a less developed country, such as Swaziland, in dire need of key personnel in the development process may interfere with individual freedom and offer scholarships or direct individuals according to their revealed scholastic aptitude towards particular professions. With or without such purposeful government action the university would still perform such a task to a certain extent (which may or may not be acceptable to a national government).

3. To provide for a study at the highest possible level. Simply put, this would imply free play of an individual's curiosity and the pursuit of truth and knowledge to the highest intellectual level. It is generally felt that this - especially for a developing country like Swaziland - is a luxury that countries or

societies seeking solutions to perplexing problems such as ignorance, diseases, starvation, etc. can ill afford. It is also implied that pursuit of intellectual excellence militates against relevance.

4. To conduct basic research and applied research including development and evaluation. Research has always been an important function of a university. Research falls into four categories: basic, applied, developmental and evaluative. As will be seen later, in Swaziland emphasis is put on applied research with the added emphasis of "relevance" to Swaziland.

5. To provide service to the community. This is carried out largely through the provision of consultative activities to the government and the private sector and carrying commissioned activities of various kinds.

In dealing with the issue of maximizing resources utilization in institutions of higher learning in Swaziland we will be referring to how the university can deploy its resources present or additional to the pursuit of any, some, or all of the five goals of a university listed above - bearing in mind that Swaziland is a developing country.

General Access to University.

In 1963 the chances of being enrolled in an institution of higher learning for youngsters born in 1943 in the following countries were as follows: for an American 1 in 3; for a Canadian 1 in 6; for an Australian 1 in 9; for a Russian 1 in 12; and for the British also 1 in 12 4/. In Swaziland the chances of being enrolled in an institution of higher learning 5/ for youngsters born in the period 1959 to 1963 is 1 in 20.

Difficulty of access is probably the most obvious hurdle to be overcome.

The educational system of this country - like that of most less developed countries countries - results in mass production of the unskilled and semi-skilled labour masses, which the primary and unorganized sectors of the economy need, and acts as a filter for training and producing the small elite, which the management of the economy and society in general need. Thus, higher education is the qualifying means of entry into the best paid, most prestigious andpower carrying jobs in the country. One would expect higher education to receive top priority i.e. access to higher education.

This does not seem to be the case in Swaziland. At present higher education is one of the most important purveyors of inequalities in our society. The tables below illustrate these points.

Table 1 shows the average basic monthly earnings of skilled workers in 1977 - these have greatly increased since then. Many people view higher education as a means of entering the "non-Swazi" column. Table 2 clearly shows the huge income discrepancies between the skilled and the unskilled. The skilled earns about 10 times the earnings of the unskilled. Access to higher education puts one in the first two columns: professional and technical; and, administrative and managerial.

Tables 3 and 4 show the estimated needs of the country of various kinds of university graduates. On the demands side the market is very small. Thus, it is felt that the current shortage of Swazi graduates will be somewhat reduced by the end of the 1983/84 year and that by 1989/90 there should be a sufficient number of local workers with degrees to localize all posts requiring these qualifications. A survey of skills in Swaziland concluded:

"This overall balance of supply and demand for such workers should be possible if enrolments for degree programmes at the University of Botswana and Swaziland * are raised to 140 entrants in 1978. Thereafter the target should be to increase the years' intake by 20 students annually, reaching 240 students in 1983 6/.

It was also envisaged that 30 students (annually) will go abroad for degree studies in subjects not available at the local university.

Clearly, then, for the purposes of managing the economy the Government has a fixed target for university output.

Doubling intake of students, therefore, would not be for the purpose of training and educating people for their professions as needed by the economy. It would largely be to satisfy (1) and (3) and the other goals of a university listed above.

One programme (Diploma in Administration and Business Studies) that was created to serve two purposes: first, as an outlet for the third class passes at high school (Cambridge examinations): and, second, for the purposes of localization of low level management posts might have to be abandoned. It has fulfilled the second part of its purpose. Low level management is now fully localized.

Be that as it may less than 5 percent of the population is likely to have access to higher education. It is imperative to look at the constraints and suggest solutions.

Tables 5, 6 and 7 show the thinking of the academic staff with regard to whether they can handle extra students. Items 2 and 3 indicate in each table what members of staff feel about whether they are overworked, have optimal workloads or underutilized; and whether they think it is possible to increase the numbers of students. Consistently those that feel they are overutilized significantly outnumber those that feel they are underutilized. In some cases the major problems are those of misutilization i.e. at Luyengo there are people who are highly specialized in some aspect of agriculture and find themselves teaching general things. Generally, over 60% of staff feel over-utilized and less than 20% feel they can handle more responsibilities. In all campuses the overwhelming majority feel that it is impossible to double students (81% at SCOT, 77% at Luyengo, and 60% at Kwaluseni).

Tables 8 and 9 indicate hourly use of staff.

Most lecturers (excluding heads of departments) teach 3 courses for two semesters a year: August - December; January - April. Using information in Tables 8 and 9 lecturers on the average use their time thus:

* Now University of Swaziland.

In the Faculty of Social Science a person teaching 3 courses (a normal workload at this university) would spend his/her time roughly in the following manner:

12 hours in preparations of lectures
6 hours conducting tutorials
3 hours preparing home assignments
12 hours preparing tests
21 hours preparing examinations
3 hours seeing students
3 hours on administrative work.

A normal working week would be about 30 hours. A week when tests are given is about 40 hours. A week when examinations are given is about 50 hours.

In the Faculty of Science a person teaching 3 courses would spend his/her time roughly in the following manner:

7 hours in preparation for lectures
16 hours in supervising practicals
8 hours preparing home assignments
6 hours preparing tests
12 hours preparing examinations
5 hours seeing students
5 hours on administrative work.

A normal working week is almost 35 hours. A week when tests are given is about 40 hours. A week when examinations are given is almost 50 hours.

It is safe to say that a lecturer is occupied daily for about 8 hours for 30 weeks per year. The exception is the period June-August. During this time - when the university is closed - lecturers may engage in officially approved research or have to report daily to their offices and may be called upon to do a variety of chores around the university.

Looking only at availability of staff it appears that increasing students without substantial increases in resources would greatly reduce the quality of the output.

The major constraint, however, is not availability of teaching staff. It is the availability of physical facilities, most notably laboratories and laboratory-related equipment. So far the university has accepted all degree students who qualify will be taken. The major limitation being laboratory equipment.

The other major physical constraints are classroom space and halls of residence. The classroom problem is more understandable. I would recommend greater use (at present there are none) of night classes to share the few big classes available. Also the big classes could be split in two groups like they do at high school. The problem with accommodation baffles me. At present more than a quarter of the students live outside campus - forcibly; yet the majority of students rooms are single rooms.

Transport facilities between the university and the areas where off-campus students stay are very poor. There are no buses available after 6 p.m. Thus, these students cannot use the library since they have to attend lectures during the day. Why it is important for even second year students to be afforded the luxury of not sharing is totally beyond my ability to understand.

In terms of increasing the number of students most lecturers think it would be impossible with the present facilities. One lecturer at SCOT put it succinctly thus: "There is already a higher number of students in individual classes than would be acceptable elsewhere in this type of education. There is already an acute shortage of teaching and support staff".

In the Faculty of Science - Kwaluseni campus - one lecturer with a long history of teaching at university estimates that doubling student intake would require a 50% increase in staff; a 300% increase in the recurrent budget over existing one, and a 100% increase in capital equipment. In the social sciences numbers (of students) can be significantly increased with moderate increases in costs but with possibly lower quality of output.

At Luyengo increasing the number of students would certainly require a fair amount of increase in stock, equipment and other facilities; and one or two more lecturers for each department. The emphasis again is on facilities more than staff members - accommodation, laboratories, classroom space, etc. For instance more facilities right now are needed for research (poultry houses, pig houses, metabolic cages, a well-equipped laboratory for research in animal nutrition).

In so far as human resources are concerned just about everyone feels that workloads - particularly with respect to teaching should be reduced. It is very clear from strongly-worded statements that lecturers waste a lot of time engaged in simple but time consuming activities which support staff ought to be doing. One lecturer said: "We need secretaries that are more than tyrists". Yet another one said: "Overall I feel better training and management of support staff (secretaries, technicians, workers, etc.) would greatly facilitate our efforts. To be frank all the money in the world poured into the university is not going to make much difference if most of the support staff do not give a damn about what we are trying to do. There seemingly has been no effort to make support staff a part of the university. No one had directed them in such a way as to lead them toward taking pride in their jobs". Another one said: "There is too much deadwood in the administration at various levels - people who do not do their work but are kept on".

Even the cleaning of offices more often than not stand in the way of a lecturer that wants to be in the office early in the morning. The cleaning starts at 7 a.m. and it is impossible to be in the office before 8. This is ridiculous. By 7 a.m. offices should be ready for use by lecturers.

In so far as workloads are concerned it would be temrting to reduce pressure on heavily loaded senior staff by transferring duties to new entrants. Such temptation must be resisted. In the long-term the new entrant will be much more valuable to the institution if his introduction to his duties is sufficiently gradual for him to

acquire the experience and understanding needed to function effectively. For a new entrant a structured programme of on-the-job experience and formal training is probably the most efficient solution.

Finally, a very important point to note on the issue of increasing access to university is the fact that the country has to increase the supply of university candidates i.e. the number of people who go to university. At present out of 100 grade I students (pupils) only 22 reach secondary school and of these about 4 qualify to go to university. The entire education system need to be re-examined. The destiny of individuals are decided purely and simply by the filtering machine - our education system - which decides who will be part of the skilled, semi-skilled or the throngs of often unemployable unskilled people.

The university can do two things without greatly lowering quality. First, the university should participate more fully on helping Form V students upgrade their marks should they fail to gain a clear pass at the Cambridge examination level. This point is treated in the section dealing specifically with the Division of Extra-Mural Services. Second, the University has to re-examine its admissions policy. The university admits first and second class passes. However, many of the students that get a third class pass at Form V merely do poorly in English and automatically fall to a third class pass. If serving the private and public sector requires excellence in the English language of course we should continue with this policy. I doubt, however, that a person who gets a third class pass just because he has failed English language is necessarily a less capable student that the first and second class t student with similar grades but fortunate enough to register a high mark in English.

Relevance.

Relevance may refer to a situation where the study of a subject helps an individual to better undrstand himself or society or the world of nature. A more common use of relevance refers to the study directed at acquiring a particualr skill of economic or social value - medical training, legal training, engineering training, etc.

Much has been said about the need for relevance. Somebody once said that whoever demands from a university that it be relevant throughout, that it responds to ext: . . demands in everything it does, destroys by the same token the heart of academic inquiry 7/.

The arguments for andagainst 'relevance' requirements are now wearisomely familiar.. What is required is a combination between the defence of academic freedom and sensitivity for the justified needs of the community which sustains universities.

Relevance is determined by the course structure. Courses in higher education may be constructed in four main ways 8/. They may be (a) subject - centred; (b) role-centred; (c) student-centred; and (d) community-centred. Subject-centred is an approach in which the current state of knowledge in a discipline and that which contributes to its development is the central focus. Role-centred refers to the relationship of a course to a future role that a student may play, mainly in employment but also

possibly in political, culture or social life. Student-centred stresses the implicit content of courses, the affective as well as the cognitive components and the form as much as the content of courses for developing skills, interests and attitudes. Community-centred emphasizes the contribution which the course makes towards equipping students to tackle society's real needs and problems. The four are not necessarily incompatible.

Higher education curricula in this country, as is the case in many other developing countries, is discipline-based (subject-centred) because, as in the case of such institutions everywhere, the disciplines are a means of taking advantage of the historically given fund of knowledge, of probing the frontiers and penetrating them, and in the process, of maintaining and raising academic standards.

This is largely because of the simple bread and butter problem: the employment market is discipline oriented. A business enterprise would rather have a chemist rather than a life scientist, the bank wants an economist not someone steeped in economic studies, etc.

The relation between and reconciliation of the traditional disciplinary orientation of the universities and the problem-based structurers needed in accelerating development in countries such as Swaziland poses one of the most serious challenges to our universities.

Basically two approaches are recommended to counter the discipline - based curricula: (1) structural changes which involve procedures of learning while working and working while learning; (2) the nature of the research which should feed the curricula.

We have to fashion the curricula in the light of the proposed relations between work and employment on the one hand and education and training on the other.

First, the separation of education and work (the first 20-25 years of life being devoted to schooling and the next 30-35 years being devoted to work), which Swaziland, like other African countries, inherited from the colonial past may not be the most suitable arrangement 9/. It seems more reasonable to return to the past traditions where organized learning which was a function of peer learning and participation in work and community learning was interwoven with socialization. This education-work linkage would affect all aspects of the system - structure, methods, technologies, curricula and the relationship to all other developmental sectors. Participation in community activities and services such as agricultural activities, small industrial occupations, and environmental sanitation should be phased into extra curricula, pilot demonstration stage and eventually becoming part of a regular curricula of the learning system.

The objectives of this part of the curricula are to: (a) prepare students to practice and perform work - manual or administrative or professional, (b) acquaint students with the world of work and services to the community and develop in them a sense of respect for work and workers (particularly manual workers), (c) make students develop a desire to be useful members of society and contribute their best to the common good, (d) help students in understanding the principles involved in various forms of work and lead students to participate increasingly in productive work as they go through their university education and thereby enable them to earn while they learn.

All course programmes should include a project that will make students participate in practical work - whether it is for pay or not. As much as possible the project (work) must be in the field that the student is studying. This should be done under the guidance of the lecturer responsible for classroom teaching. Academic credit should be given for this work-learning to both the student and the lecturer and should appear in the final grading and performance report on each. Some suggestions will be made below on specific examples but to be effective each Faculty or even department should be responsbile for designing work/learning programmes on residential and non-residential basis.

The curriculum should not be constructed as the function of a sequential system but should reflect as well as feed back the work and employment results which its learners will reflect in their life styles and demand in their study life.

This also calls for modifications of the present examination system. The resultant system should include in the final grade a record of learning attitudes and attainment in both the theory and application of programmes of study.

This approach - bringing together theoretical knowledge with field experience should lead to a development of a wealth of development strategies. Within this framework it would be easy for experts to identify target groups, forms of education required for each group and thus be able to design appropriate training programmes for each group.

Several methods can be employed to merge learning and working.

Students can be attached to industries, farms or institutions outside the university that are relevant to their field of study during the long vacation. For students there is a long break between the beginning of May to the end of August. This time could be utilized for work experience. Long vacations that leave students unused is a luxury we cannot afford in a developing country such as ours.

One method for merging work and learning is bringing students from the private sector who have had a few years of practical experience into the institutions of higher learning. Also instructurs who have had expeirnce in the private sector can be brought into the university - there is a vast amount of theorectical knowledge and too little of practical training. Another alternative, is to provide instructors the opportunity to work on a productive farm. (an example is the American Farm Bureau Programme which brings many students to perform a year of practical work for pay - many of of these students are extensionists, etc.)

To do practical work students need not be away from their studies. Classes would be held at night (between 7 and 10) so that people can go to school while working. This could be for a semester or so.

It is very important to emphasize that lecturers too need work experience especially in technical subjects (industrial and agricultural). To teach a technical subject without the necessary practical experience is most difficult. The local lecturer - especially at SCOT - is usually at a considerable disadvantage on his return due to his lack of practical training, skills, and work experience, when considering the nature and type of some of the teaching duties he is expected to undertake and in view of the present nature of some of these courses he should be offered a period of training in local industry. Six months in industry to be treated as a sabbatical would be advantageous.

Practical experience for lecturers seems highly desirable. The need is two-fold: first, for the teacher to have such experience during his formative years; and, second, for him to repeat and reinforce this experience periodically throughout his career. Adoption of such programmes would significantly alter the present pattern for teaching careers, and all parties involved would be affected. The teacher would in fact develop a double career, while the academic institution would need to accept the absence of staff members from their posts for significant periods. Industrial concerns, consulting firms and government bureaux would need to stand ready to receive and utilize occassional employees who, although competent, would not be permanently integrated into their organizations. The difficulties inherent in such an extensive programme are not so much financial as structural. The various aspects would have to be studied and allowed to evolve over a decade or so if the disruptive effects are not to offset the splendid opportunities for aligning technical education more effectively with practice.

The benefits to the lecturer are enormous. His special talents will emerge over a period of a few years, and he and his supervisors can decide what additional training will suit him for additional responsibility.

Lecturers in the technical courses would benefit even more from a period in industry during their formative years and from periodic returns to practice throughout their careers, even though the initial period delays the beginning of teaching.

Most of the courses at SCOT are professional subjects and can only be taught effectively by staff who have experience of the functions and responsibilities of professionals. The most important factor determining the quality of the graduates emerging from these institutions is the quality of the teaching staff as well as the orientation of the teaching staff. If the working while learning ethic is inculcated in the minds of the lecturer it would be relatively easy to pass it on the youngsters. Systematic leave should be granted to professional staff to enable them to carry out developmental activities including participatory research or to work in industry. About six months every two years could be spent working in industry.

Working while learning and learning while working can be combined with "earning while learning". Students can carry out projects such as broiler production and egg production for Luyengo and a myriad of possibilities particularly for SCOT and Luyengo exist.

A project system can be organized whereby students take on projects individually or in small groups e.g. a hectare of beans or maize or intercrop is raised by students. The university would provide loans for the crop inputs. The students would make their own budgets, the funds would be created. These funds would be used for the next project. Student record keeping and operations would be under the guidance of an instructor. One half of the profits would be returned to the Revolving Fund to take care of losses and to increase the fund. Such projects have been followed successfully in overseas universities.

The Swaziland College of Technology can raise funds for itself in numerous ways. Let us take the electrical section for an example: students, as part of their practical work could wire some houses around Mbabane thus raising some funds to furnish their department. This shows there is a potential to get equipment which is in short supply. At present funds limit available supplies.

Outside help from such organizations as Swazi Bank, Tibiyo, Ministry of Agriculture and Co-operatives, etc. should be enlisted to begin a programme of work while learning and learning while working. In many sectors e.g. the dairy industry, limited commercial enterprises make it imperative to look to parastatals and Ministry projects for Working while learning and learning while working. The university could work closely with Ministry of Agriculture andCo-operatives in efforts to co-ordinate extension activities and strengthen extension related ties between Uniswa and the Ministry of Agriculture and Co-operatives.

Some lecturers expressed strong reservations with regard to combining learning and working. "For university students scrap the whole idea. Learning is harder work than the students will face in the rest of their career. But they should be reminded of their origins and encouraged to go back", said one lecturer. "Teaching and field work expereince, yes. It is easy enough to time table one free day per week for field work. Learning and field work - not so well, except with short, intensive, up-dating courses on a narrow topic, for field workers at some central institutions", said another. Yet another lecturer said: "I would recommend that you learn first and then you go and work. After working for some time you go back to learn again since in the field you have acquired some experience and then you come back to work - sort of in-service training - better results would be achieved".

These comments make it abundantly clear that customary resistance to structural changes brought about in institutions that people have known all the time still remains a factor even at university level. Working while learning and learning while working is quite feasible; and with careful planning the disruptive aspects of the introduction of such programmes could be kept at a minimum.

RESEARCH

The functions of a university include research as one of the most important of these functions. Research extends the frontiers of knowledge and, where it concerns itself with matters of social significance rather than trivia, holds out the possibility of providing solutions to vexing social problems. Research must, therefore, be at the centre of the University activities.

A university teacher must necessarily be engaged in research work. Research is an essential condition for the continuous development of the intellectual standard of teaching staff, and for a living education adapted to the demands of the modern world.

The orientation of research should be decided in relation to Swaziland's needs, while preserving the university's academic freedom in this field. In no case should basic research be abaondoned or decreased. On the contrary it should be developed in harmony with applied research.

The scientific future of a country depends on the relations between the university and the government. Research should be oriented, as much as possible, towards the government and its long-term development targets or goals. The new orientation of research towards development objectives will require much closer relationships between government ministries and institutions of higher learning.

In research, a change of attitude as to basic purposes is required - anchoring it solidly in the development needs of the country's agriculture, industry, etc. rather than as an end in itself. The numbers of vexing problems are numerous, and the research resources and competencies extremely limited. Selection of problems for research must be based on criteria such as relative importance to development, probability that research may find a solution, probable usability of the solution by the relevant target group (farmers, government, industry, etc., and probable cost of the research.

The Faculty of Social Science has the Social Science Research Unit which to a certain extent seeks to meet these requirements. However, it is a recently established unit and its direction, let alone impact, remains to be seen. In the Faculty of Science, Professor Makhubu, the Pro Vice-Chancellor, is developing plans for a "Science and Technology Research Unit". This is of great importance. Hopefully it will successfully take-off with a research fellow, documentalist and other support staff to work closely with the faculty of agriculture, Industry, Small Enterprise Development Corporation, etc. to choose and solve specific scientific/technical/engineering problems for these sectors and "catalyse" the several keen scientists in the faculties of science and agriculture to contribute to the developmental efforts in this country.

Publication is essential for the dissemination and useful application of new ideas. Existing outlets for original work now favour sophisticated research over significant findings oriented towards national development. Hence ambitious and potentially productive young teachers are forced to tackle the more sophisticated problems instead of the applied problems which confront their country. As the world-wide importance of developmental research becomes better recognized, new jornals must be developed to encourage and reward such work and to allow others to benefit from its findings. The present criterion of the probability of publication in a prestigious foreign journal, must give way to those of relevance.

Tables 5, 6 and 7 show that very little time is dedicated to research. For the Kwaluseni campus about 90% of the staff spends over 80% of their time teaching, leaving very little for research. About 70% of the staff spend less than 20% of their time on research. In terms of relevance, though, 70% of those who have done some research have done some research related to Swaziland.

For the Luyengo Campus 70% of staff spend more than 80% of their time in teaching and teaching-related activities and about 50% spend less than 20% doing research. In terms of relevance, 70% of the respondents had <u>never</u> undertaken research related to problems in Swaziland.

Research opportunities are greatly reduced by the amount of teaching loads. Several points can be raised here.

First, problems exist in that there is a shortage of trained support staff, in particular, secretaries, laboratory, and workshop technicians and as a result duties normally carried out by support staff are undertaken by lecturers resulting in time being lost which could be utilized in curricular development, projects for courses and course administration. Lecturers are also expected to teach over a wide range of

subjects due to the varied courses and shortage of lecturers.

Also the loads tend to be unevenly distributed. The younger being burdened with more teaching and the older being involved more with administration. Younger and newly qualified lecturers should be given time to be spent in research and field practice. I would recommend that the teaching loads, etc. for newly-recruited staff members be less than for the "experienced" staff members for the first two years to allow new recruits to settle down and prepare themselves for the benefit of the students by reading conducting research, and consulting the other veterans of the staff members. After that the loads and other activities can be equally shared. Also each individual staff member should be told about his/her performance.

Matters specific to the Swaziland College of Technology and the Division of Extra Mural Services (SCOT).

The Division of Extra-Mural Services - DEMS.

The division of extra-mural services (DEMS) is the single most important contact or link between the university and the public. The present director of the Division sees the role of DEMS as commitment to effectual public service and development; to training and development of professional adult education and actual participation in the development of Swaziland.

> We are dedicated to the formation of a vital link and partnership between the University of Swaziland and all the individuals and organizations in both the public and private sectors. We are concerned with bridging the gap between the urban and the rural areas. We are committed to ensuring that every individual gets an opportunity to learn and improve his or her skills and enhance his or her chances of gainful employment and the general improvement of the standard of living in Swaziland 10/.

DEMS has to be viewed as a vital part of the university providing a link between the University and the wider community. Two programmes of DEMS are particularly relevant for this study. These are (a) The "O" Level Bridging Programmes, and (b) Diploma in Adult Education.

(a) The "O" Level Bridging Programmes

DEMS can best provide for continuing education and distance learning. The need for continuing educational opportunities is obvious in this country. It seems not merely out of changing socio-economic conditions, but changing technologies, changing social and political values, the development of new fields of knowledge. As the Director of DEMS has observed, one of the most disturbing aspects of our education system is the arbitary cut-off point which is built into the educational lives of our students. The Swaziland educational system is divided into three parts. A longer number enter primary school, but very few reach extra tertiary education. During the course of this process, not only formal education but the opportunity for continuing an education has suddenly stopped for most. Those who leave school, for a variety of reasons for which young people do leave school, and do not wish, or are not equipped to continue with formal, tertiary education, a process of total exclusion so any education begins. Those who might wish to try again are deliberately forced out and discarded to swell the ranks of the increasing army of unemployed and often times unemployable young people in this country.

DEMS has moved in to try to alleviate the situation - with very meagree means i.e. under severe financial constraints. Notable in DEMS' programmes is the "O" Level Bridging Programmes.

There have been questions on the advisability and appropriateness of such programmes for a university extension service. It has been suggested that such an activity should be left in the hands of the Ministry of Education and Emlalatini Development Centre. In this way, it is argued, professional members of DEMS would devote their full attention to the more pressing developmental needs of this country.

The Division's director acknowledges that these are valid concerns but points out that the Ministry of Education alone cannot at present tackle this task. The Division, on the other hand, is well placed to offer this kind of assistance until the ministry is in a position to re-assess its philosophy and recognize that high school education need not necessarily be provided during the day and to full time students only.

In Swaziland, almost all training institutions require that applicants must have passed at "O" levels. Where Junior Certificate is the minimum entry requirement, the number of applicants with "O" Levels make it impossible for Junior Certificate graduates to gain entry. As a result the demand for high school education has increased tremendously during the last ten years. This demand, with the increased failure rate, cannot be met by the existing high schools. As a result the ministry has been forced to prevent those students who fail at "O" levels from repeating on a full-time basis. Instead, the Swaziland International Education Centre (now called Emlalatini Development Centre) was setup as a correspondence school for those wishing to have a second chance. Emlalatinin alone cannot cope with the numbers. Besides correspondence education alone, prevents those youngsters with considerable aljustment problems from classroom-type education to correspondence education from re-entering the education process.

In an attempt to assist control this situation, DEMS has embarked on an upgrading programme from "O" level students. The programme is designed to:

(a) Assist the Ministry of Education in meeting the demands for more high schools and expanded classroom space.

(b) Assist those students who cannot adjust themselves to correspondence education, and

(c) Upgrade and qualify them for entry into the various training institutions and indeed in some cases, to enable them to enter gainful employment.

Table 10 and 11 clearly demonstrate the contribution of DEMS to this programme. The quantitative superiority of DEMS programme over the Emlalatini contribution is impressive. This, in spite of the fact that from 1981/82 to 1982/83 the number of centres where DEMS offers these programmes were actually reduced - because of economic considerations. Still the number of participants continue to rise.

Obviously DEMS contribution is significant. This, particularly, because one of the major purpose of the University (and a major concern of the sponsors of this study) is general access to institutions of higher learning. So far in Swaziland just about everyone who qualifies to go to university gets a scholarship and proceeds to degree or diploma studies. Unfortunately, in recent years, far less than half of high school students actually pass well enough to get admission at university. DEMS' upgrading programme is thus a very significant contributor to general access to university.

(b) Diploma in Adult Education

This is an in-service programme designed to equip people in adult and non-formal education with the philosophies and techniques of adult education. To date it remains a correspondence course whereby participants attend seminars at the university once every month. DEMS have made attempts to have this programme taught on a full-time basis. It is felt that the programme could be made more effective if participants would come from men and women who are experienced workers in the various extension, education and development agencies in Swaziland, for an example the Ministries of Agriculture and Co-operatives, Education, Health, Home Affairs, Commerce, Industry and Economic Planning.

DEMS has been successful in attracting prospective participants but have been unsuccessful in persuading their employers to release them for a two-year period of absence. As a result this programme has had to be modified so as to be offered on a part-time basis.

Some DEMS programmes are restricted or abandoned because the university requires a minimum of 15 students before any class can start for part-time students. This requirement is based on economic considerations only. It is a most unfortunate one because DEMS programmes spread the access to university to people who would otherwise totally miss it. For full-time students only a minimum of 3 is required. This has led the Director of DEMS to observe: "It is in this regard that some of our part-time programmes look like step children of the university" 11/.

Need for "Adult Studies Centre"

What I want to talk about here is simply a building - whatever it is called - that can accommodate participants to seminars.

Major constraints that face the Division seem to be (1) availability of funds the division can use and control; (2) a building that can accommodate participants to seminars. Classrooms and equipment are available. Each time a seminar is held it must be at a hotel. For running a two-week training workshop high-level DEMS staff-including the Director - have to be engaged in long and time consuming preparations largely involving the organization of accommodation and money to pay for it. As a result DEMS has to limit the number of workshops and make them very few.

DEMS need such a building. The place would accommodate out of school people, and they would have access to the library, academics, etc. It seems that what is needed is a place to accommodate up to 100 people. This place could also be used to accommodate newly-arrived staff while waiting for proper accommodation.

It would enable DEMS, not only to hold workshops more frequently, but also to draw upon the academic expertise and facilities of the university and its staff to serve people that would not normally have access to such facilities. At the same time DEMS would be able to help with the arrangement of external tutorial sessions, and the "Adult Studies Centre" would be available for short residential sessions.

Swaziland College of Technology

The college has about 700 students (about 600 residential). The teaching staff is just over 50. Courses offered range from the short upgrading and totally practical type to those at the middle technology level involving a high theoretical content.

The college was established to meet industrial needs of the country. Industrial training in Swaziland aims to provide young Swazi men and women with the practical skills and related knowledge necessary for obtaining and retaining employment as skilled workers.

Although SCOT is largely concerned with the formal side of training, industrial training is maintained through an Apprenticeship Unit, A Supervisory Training Unit and a Trade Testing Unit, all of which are allocated on college grounds. Both formal and in-service aspect of training are administered by the controller of industrial Training who is also the Principal of the college and directly responsible to the Deputy Prime Minister's office.

The Apprenticeship Scheme

The Industrial Training Act governs all aspects of in-service training, the most common form of which is by apprenticeship. The act is administered by the controller of Apprenticeship and all apprentices entering the apprenticeship scheme are registered under contract for a specific number of years. Apprenticeship periods vary according to the trade concerned, but are usually of four or five years' duration.

In smaller Industrial concerns such relationships may be served entirely "on-the-job" under the supervision of a foreman or chargehand. However, most apprenticeship training in Swaziland now consists of a combination of formal training of a full-time sandwich or block-release nature and in-service training in industry. The scheme now has about 700 apprentices. About 85% of these apprentices are receiving or have received their formal training at the SCOT. The remaining 15% are being trained by larger industrial concerns in highly specialized trades not catered for by the college.

Supervision/Junior Manager Training and Development Unit

The purpose of this programme is to:

- prepare potential supervisors for positions of responsibility.
- improve the performance of existing supervisions and junior managers.
- introduce the use of modern techniques to personnel engaged in in the training of supervisors and junior managers.

Increased numbers of people participating in such courses can only greatly enhance development prospects of this country.

The Trade Testing Unit

Organized by a co-ordinator, a Trade Testing Scheme is in operation to cater for artisans who have acquired their skills through or outside the apprenticesni scheme. It is designed to evaluate and satisfy an artisans' level of skill according to National Trade Standards drawn up by various Trade Testing Panels in consultations with the public and private sectors of industry and the Swaziland College of Technology.

Formal Training at SCOT

The college offers a wide variety of courses in an attempt to satisfy the local manpower needs for localization and development of Swaziland's Industrial and Commercial sectors. Since the nature and number of these courses depend on these manpower requirements, the college maintains close liaison with Government Ministries and the major industrial and public service organizations.

The rapid development of facilities has been matched by a corresponding increase in the level of courses offered. Thus in addition to craft-level courses, many departments now offer technician courses up to Part II, and ordinary diploma levels. While these courses operate at the middle-technology level, plans are underway for the introduction of Part III and higher technician courses which will provide trainees with the knowledge and skills required to enter the world of higher technology.

GENERAL FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

1. The university should reduce the present teaching loads, particularly for newly recruited staff. Staff members should be increased to distribute the teaching load in such a manner that efficiency is enhanced and time is available for conducting research. Most departments can use one or two more lecturers or at least two teaching assistants. To maximize productivity of indifidual lecturers an equitable allotment of teaching time is necessary. Too many repetitions of the same thing by the same lecturer on the same day or even week can dampen the zeal of the most ardent. Also, the university should use under-used local teaching resources - guest lecturers, field trips, farm/business/mine visits.

2. Establish or strengthen relationships between Government departments and the university. The same applies to industry and university relationships. This is important if working while learning and learning while working programmes are to be introduced.

3. The university should put more emphasis on "relevance". There should be more Swazi terms of reference in all teaching illustrations (instructors, both local and expatriate should take more effort to learn the Swazi system, possibilities, etc.). The overwhelming majority of lecturers are expatriates. This point is, therefore, importan.

4. Lecturers need to utilize better teaching techniques - probably more overhead and slide projectors should be available as well as an Audio-visual trained person to demonstrate "proper use" techniques. Large classes tend not to follow blackboard or lecture "only" presentations very effectively. Handouts only tend to "spoon feed" students limiting thought processes and encouraging "regurgitation". More use of tutorials is desirable. In the Faculty of Social Science tutorials are hardly used.

5. Facilities are grossly inadequate. Class rooms are overcrowded. Facilities should be increased. Some classes e.g. at Luyengo are so large that they are usually divided into 2 to 3 groups for lack of facilities. This only duplicates or triplicates content hours for a staff member.

6. There exists a big challenge in secondary school level as well as at lower levels in preparing students for university work; currently staff spend considerable time upgrading the standard of form V students joining university standards. As a result, opportunities for research, etc. are wasted.

7. The library should be provided with funds to purchase more than the currently enforced limit of 3 copies per recommended text. With classes of 60 or more, 3 copies are simply too few. This forces lecturers to go too slow to allow detailed note taking by students, who in turn do not bother to read on their own material outside their notes. The lecturers of the university should have more access to the library than at present. Lecturers may take out books for only a month and are fined if the book is not returned. Lecturers do not have to pass any courses and so do not have to risk fines. The opening hours are also short. The library opens late at 9 in the morning. It should open earlier. Generally, the library is run in a manner that suggests that its main duty is to provide employment for people working there than to serve students and lecturers.

8. Academic requirements for teaching assistants and technicians should be raised and their positions adequatly renumerated so as to attract the best material available.

9. The university should provide offices for the academic staff. Numerous staff members have to share office space. This greatly reduces productivity and many staff members feel insulted by the setup. This also encourages staff members to use their homes as offices and thus limit access to them by students. Office equipment should be improved. Some staff members have no filing cabinets. It is very important for workers of all kinds or levels to be happy about their "job surroundings". The university seems to be totally oblivious to this well known fact. The university must create suitable environments for the staff if the university expects to have programmes of good quality. Since programmes of lesser quality are wasteful and ineffectual, policies and financial support must provide opportunities for progress which will attract and retain talented teachers.

10. The university should increase financing available funds for research. Also the university should increase the rewards and recognition for staff effectiveness both within and outside the university.

Good teaching should be encouraged. The most important job a university has to do is teach students. This should be obvious. Broadly speaking we might say a good teacher will meet three requirements: he will be competent with respect to his subject, he will have a knowledge of teaching devices and skills, he will have a rich personality, zest, and a deep interest in his students as persons. The presence or absence of these characteristics can be assessed through questionnaires to students (course and lecturer evaluation). Unfortunately the academic staff at the university of Swaziland is vehemently opposed to the idea of being assessed by students.

11. For distant learning the university should have as one of its major objectives commitment to the idea of extending opportunities for university education beyond the ranks of those who can attend the university on a full time basis in order to assist the nation to mobilize its potential intellectual resources in a situation of acute scarcity of high level manpower. Also to enable those who had left school before the opportunities for higher education in the country had come into existence to realize their potential abilities for their own advantage and that of society as a whole. Admission criteria must be adapted and made more flexible so that credit is given for work experience and informal learning whereever possible.

12. The university can also contribute to the development of lifelong education in the following ways; first, within the constraints provided by the legitimate pursuit of intellectual excellence and academic integrity, the university should aim to widen, as far as possible, the range of students for whom they cater. Secondly, the university should relate its programmes of study and the research efforts as far as possible to the social needs of the community as a whole and not limit itself to narrowly academic terms of reference (though it must be repeated that academic integrity must be maintained). Third, the university should act as a resource centre for the rest of the educational system providing learning materials geared to the needs of lifelong education and carrying out the necessary research.

13. The university should seek a workable integration of the teaching and research function so students can benefit from the realism which this brings to the subject matter.

14. To be more effective, in so far as possible, considering the limitations of the syllabus and examination system, revise courses to keep pace with research and the advances of agriculture, industry and science in general.

15. The university should strongly encourage the preparation of indigenous textbooks - or at least teaching manuals - and realistic teaching materials.

16. The student is the most important factor in any learning situation and he must be made aware that "the pursuit of learning presumes commitment to a serious view of life, earnestness of purpose and a responsible quest for learning" 12/.

17. For teachers i.e. students (humanities) there should be a provision of a post-graduate training in the form of a one-year sandwich course, in which the trainee teaches full time during the school terms, and undertakes preparatory and theoretical studies on a residential basis before and after, in place of the more conventional one-year residential course with its slightly artificial "teaching practice". This approach, although requiring careful and thorough planning and execution, offers significant savings in terms of the graduates teaching contribution, and there is also some evidence that the greater amount of teaching involved enhances the professional satisfaction of the trainee 13/.

Specific Recommendations

(i) With regard to resources;

(a) Students should double up in residences up to third year.

(b) Support staff - technicians, secretaries, etc. should be increased and their quality improved.

(c) Laboratory equipment should be increased. This should be treated with agency.

(d) Classroom space should be increased in the near future. Before then night classes should be considered.

(e) The Division of Extra-Mural Services must be allowed to control the funds allocated them so they can carry out their work more efficiently.

(f) Admissions criteria should be revised so as to recognize work experience.

(ii) Programming higher education on a residential and non-residential cycle.

(a) The long vacation should be turned into a third semester. The third semester should be for practical experience according to recommendation (17) above.

(b) The Diploma in Administration and Business studies programme should be 3 instead of 2 years. After year one student should work for a full year and then come back for one more year of theoretical work. This programme could also provide "guinea pigs" for the working while learning and learning while working experiment.

(c) Government and parastatals should employ students for these programmes. The University should approach the relevant ministries and work out arrangements.

(d) Those students that do not find employment during the "third semester" should undertake a practical project or carry out community-related research.

(e) People should be brought from the private sector for a year or so both for teaching and learning purposes.

(f) DEMS facilities should be increased so as to expand their continuing education and distance learning programmes.

(g) Lecturers that teach technical subjects should have at least one year of practical experience.

(iii) The Nature of research and contribution to accelerating development.

(a) Reseearch should be linked strongly with the promotion of academic staff. At present research and publication has very little, if at all, to do with promotions. Emphasis is on administrative experience.

(a) This fails to encourage productivity in one very important area: research.

(b) Teaching workloads should be reduced and support staff increased and the staff should then be monitored carefully to see to it that they use their time productively.

(c) Areas of research should include areas drawn up by government ministries and the private sector. Emphasis should be on the national policies of agricultural and industrial development.

(d) While the orientation of research should be decided in relation to Swaziland's needs, the University's academic freedome must not be stifled. Basic research must not be abandoned.

(e) The Social Science Research Unit must be expanded, strengthened and copied by the other facilities.

(f) Relevance and contribution to national development can be enhanced through closer links with government through consulting services and committee work, emphasis on manpower development and the greater vocationalisation of the curriculum the use of the local environment in teaching and research; attention to research in specific problems and the establishment of specialized research institutions; multi-disciplinary approaches to research and teaching; work-study programmes, community involvement and outreach programmes to sensitize students to community problems; national service as an instrument for correcting values and attitudes and for generating new skills; and more flexible admission policies to improve access to the University. These are the goals that, to maximize the use of resources and have maximum impact for these institutions, we have to aim at.

Financial Considerations

Unfortunately, the perceived need for the university to increase its involvement with the development process, does not coincide with a favourable financial climate. This is the case in most of the countries of Africa. In a country starved of all forms of development, the competition for the diminishing cake of the state is necessarily fierce. The university budget has not grown as afast as has been the pressure on the university to offer additional services. An uncomfortable gap exists between conceptualization as to the role and function on the one hand, and the material base for change in the university. Like other universities in Africa and elsewhere, the university faces the hard prospect of increasing its role and responsibility in a cost-conscious world. This makes it imperative that existing resources are used efficiently, i.e. maximising the use of resources.

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3. These are listed in the Ontario Council on University Affairs: Fifth Annual Report, March 1, 1978 to February 28, 1979, Toronto, but the explanations reflect what the author views these functions to be.

4. Sir Eric Ashby: "Investment in Man" in the Advancement of Science, Vol. 20, No. 85, September 1962.

5. i.e. at the University of Swaziland (Luyengo and Kwaluseni) and the Swaziland College of Technology.

6. Skills for the Future: Education and Manpower Perspectives in Swaziland, (prepared by Christopher Colclough and Peter Kingfield Digby), Ministry of Finance and Economic Planning, Mbabane, May 1978., pp. 41-43.

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9. See Backas C. Sanyal in "The Teaching of Sciences in African Universities: Report of the Seminar on the Teaching of Basic Sciences in African Universities, Rabat, 13 to 22 December 1962, UNESCO.

10. Division of Extra-Mural Services, University of Swaziland, Annual Report 1982/83, P. 2.

11. Division of Extra-Mural Services, University of Swaziland, Annual Report 1980/81, p. 10.

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TABLE 1

AVERAGE BASIC MONTHLY EARNINGS (EMALANGENI) OF SKILLED WORKERS BY SECTOR, OCCUPATION GROUP & CITIZENSHIP

Occupation Group	Private and Parastatal		Government		Total	
	Swazi	Non-Swazi	Swazi	Non-Swazi	Swazi	Non-Swazi
Professional and Technical	119	362	180	419	134	370
Administrative and Managerial	337	685	574	660	411	685
Clerical and Related	152	341	122	262	139	334
Sales Workers	130	414	*	*	130	416
Service Workers	120	392	83	129	93	362
Agriculture, Forestry and Related	155	452	129		150	449
Production, Transport and Related	157	423	119	200	143	410
All Skilled Workers	140	425	134	363	138	419

SOURCE: MANPOWER SURVEY 1977; CENTRAL STATISTICAL OFFICE, MBABANE

TABLE 2

AVERAGE EARNINGS OF MALES BY INDUSTRY, SEX, AND SKILL, JUNE 1978 AND 1979 (PRIVATE SECTOR)

Industry	Professional & Technical		Administrative & Managerial		Clerical & Related		Skilled		Semi-Skilled		Unskilled	
	1978	1979	1978	1979	1978	1979	1978	1979	1978	1979	1978	1979
110 Agriculture	776	635	581	619	125	116	313	346	84	124	56	57
120 Forestry	751	757	628	765	250	233	341	569	107	170	55	76
200 Mining	979	1028	1115	1061	208	212	546	586	150	168	114	123
300 Manufacturing	689	871	827	7407	205	219	521	470	109	143	90	102
500 Construction	856	685	657	784	223	252	432	507	210	196	94	82
600 Distribution	654	619	497	462	176	205	212	281	125	157	75	125
700 Transport	283	1115	777	1427	125	179	360	366	105	133	89	72
800 Finance	625	553	775	905	263	212	380	144	132	86	69	91
900 Social Services	566	582	579	552	144	168	294	303	106	148	72	123
TOTAL	715	690	647	672	188	196	404	445	142	159	71	81
	(291)*	(330)	(305)	(320)	(187)	(203)	(146)	(224)	(73)	(82)	(42)	(53)

*These bracketed figures are averages for female employees.

Source: Employment and wages, 1979 Central Statistical Office Mbabane.

TABLE 3 REQUIRED OUTPUTS OF UNIVERSITY GRADUATES BY SUBJECT, 1977 - 1989

Discipline	Output of Swazi graduates required	Each discipline as % of total output	% of each annual output required by Central Government
Agriculture/Life Sciences 264	264	11	15
Physics/Chemistry/Geology	38	2	58
Engineering	175	7	25
Architecture/Surveying	44	2	70
Medicine/Dentistry/Vet.Science	138	6	58
Pharmacy & Related	28	1	32
General Science	133	6	15
Statistics & Related	30	1	90
Economics	71	3	68
Accountancy	86	4	13
Law	61	3	46
Degree with education	725	31	3
Other degree 1	531	23	17
TOTAL	2324	100	20

1. This category include all subjects not specified separately. Many of these people could usefully study one of the subjects specified.

SOURCE: MANPOWER SURVEY 1977, AND PROJECTIONS OF DEMAND FOR SKILLED AND EDUCATED MANPOWER.

TABLE 4 RECOMMENDED PERCENTAGE ALLOCATION OF DEGREE PLACES BETWEEN FACULTIES, WITH AND WITHOUT CONCURRENT CERTIFICATE IN EDUCATION

FACULTY	DEGREE	DEGREE + CE 2/	TOTAL
Agriculture	14	5	19
Science	32	10	42
Professional Studies 1/	14	5	19
Humanities	-	20	20

1. Professional Studies are taken to include Statistics, Economics, Accounting and Law.

2. CE = Certificate in Education

Source: Manpower Survey 1977; and projections of skilled and educated manpower.

TABLE 5

The manner in which lecturers allocate their time between various academic activities and their views on increasing student numbers: Kwaluseni Campus.

ACTIVITY	PROPORTION OF TIME SPENT ON THE ACTIVITY				
	80%	50%	50%	20%-	0%
Teaching	90%	10%			
Research				40	20
Consultancy				10	

LECTURERS THAT FEEL: :

Underutilized	:	10%
Overutilized		60%
"Just Right"		30%

LECTURERS THAT FEEL THE NUMBER OF STUDENTS

Can be Doubled	:	30%
Cannot be Doubled	:	60%
Increased Marginally		20%

Lecturers that have undertaken research related to Swaziland since they joined the University - Kwaluseni Campus.

Have	:	70%
Have not"		30:

*Percentages. These may or may not add up to 100 depending on whether the frequencies are exclusive or not.

TABLE 6:

The manner in which lecturers allocate their time between various academic activities and their views on increasing student numbers: Luyengo Campus.

ACTIVITY	PROPORTION OF TIME SPENT ON THE ACTIVITY				
	100%	50%	50%	20%	0%
Teaching	70%	30			
Research	7			35	12
Consultancy				15	85

LECTURERS THAT FEEL:

Underutilized:	30%
Overutilized	38%
"Just Right" :	32%

LECTURERS THAT FEEL THE NUMBER OF STUDENTS :

Can be Doubled:	70%
Cannot be Doubled:	77%
Increased Marginally:	38%

LECTURERS THAT HAVE UNDERTAKEN RESEARCH
Related to Swaziland since they joined the University - Luyengo Campus.

Have :	30%
Have not:	70%

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* Percentages. These may or may not add up to 100 depending on whether the frequencies are exclusive or not.

TABLE 7:

The manner in which lecturers allocate their time between various academic activities and their views on increasing student numbers: Swaziland College of Technology.

Activity	Proportion of time spent on the activity				
	80%	50%	50%	-20%	0%
Teaching	38*	44	3	0	0
Research				44	44
Consultancy			16		56

Lecturers that feel:

Underutilized	:	19%
Overutilized	:	63%
"Just Right"	:	18%

Lecturers that feel the number of students:

Can be doubled	: 0%
Cannot be doubled:	:81%
Increased marginally	:31%

Lecturers that have undertaken research related to Swaziland since they joined Scot:

Have	: 6%
Have not:	94%

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* Percentages. These major may not add up to 100 depending on whether the frequencies are exclusive or not.

UNIVERSITY OF SWAZILAND

FACULTY OF SOCIAL SCIENCE — WORKLOAD SURVEY 1

TIME NEEDED (IN HOURS) TO PREPARE* — TABLE 8

1. One lecture-hour if course is given for the first time.
2. One lecture-hour if course is repeated.
3. One tutorial if course is given for the first time.
4. One tutorial if course is repeated.
5. One home assignment if course is given for the first time.
6. One home assignment if course is repeated.
7. One test-paper if course is given for the first time.
8. One test paper if course is repeated.
9. One examination paper is given for the first time.
10. One examination paper if course is repeated.

TIME NEEDED (IN HOURS)

11. To mark one home assignment paper.
12. To mark one test paper.
13. To mark one examination paper.
14. Number of home assignments given per course and semester.
15. Number of tests given per course and semester.
16. Time spent (in hours) per week with one student working on a project.
17. Time spent (in hours) per week seeing students.
18. Time spent (in hours) per week on administrative work.

To convert time given in decimals into minutes multiply the decimal-figure by six (6)

Source: The information contained in Table 8 was collected by two colleagues or Ruppert and or Matsebula for the Faculty of Social Science.

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* See corresponding figures (1-18) on page 36.

Table 8 cont'd.

Accounting and Commerce	Economics	Law	Sociology	Statistics	Political and Administrative Studies	All Departments
3.5	2.8	4.6	4.5	4.2	3.4	3.8
2.0	1.2	2.5	1.9	1.0	1.9	2.3
1.5	1.5	4.7	4.9	2.5	2.4	2.2
1.0	1.0	3.0	0.8	1.3	1.4	1.6
1.0	1.5	3.0	1.2	2.5	2.6	2.0
0.8	1.1	3.0	1.0	1.0	1.	1.3
3.5	2.5	5.2	2.3	4.0	4.4	3.7
2.0	1.9	5.2	1.3	3.0	1.3	2.5
16.3	6.5	7.4	4.0	8.0	4.3	7.5
14.8	4.2	7.4	3.3	8.0	3.6	6.8
0.3	0.6	0.6	0.8	0.5	0.8	0.6
0.4	0.8	0.6	1.1	0.6	0.5	0.6
0.9	0.9	0.7	3.0	1.2	0.7	0.9
13.7	2.5	2.9	5.6	3.3	4.7	5.7
2.2	1.9	1.6	2.3	2.0	2.5	2.1
0.6	0.7	-	0.3	1.4	0.4	0.8
2.7	1.8	2.9	2.3	2.9	3.2	2.7
4.1	3.2	2.8	3.0	4.7	4.0	3.7

TABLE 9

UNIVERSITY OF SWAZILAND, FACULTY OF SCIENCE WORKLOAD SURVEY[1/]

TIME NEEDED (IN HOURS) TO PREPARE:

1. One lecture-hour if course is given for the first time.
2. One lecture-hour if course is repeated.
3. One practical if course is given for the first time.
4. One practical if course is repeated.
5. One home assignment if course is given for the first time.
6. One home assignment if course is repeated.
7. One test paper if course is given for the first time.
8. One test paper if course is repeated.
9. One examination paper if course is given for the first time.
10. One examination paper if course is repeated.

TIME NEEDED (IN HOUR):

11. To mark one home assignment paper.
12. To mark one test paper.
13. To mark one examination paper.
14. Number of laboratory reports given per course and semester.
15. Number of tests given per course and per semester.
16. Time spent (in hours) per week with one student working on a project.
17. Time spent (in hours) per week seeing students.
18. Time spent (in hours) per week on administrative work.

1/ To convert time given in decimals into minutes multiply the decimal figure by six (6).

Table 9 cont'd

Biology	Mathematics	Chemistry	Physics	All Departments
1.5	2.0	2.0	4.0	2.3
.5	1.6	1.8	2.0	1.4
4.0	3.0	2.0	15.0	5.4
1.0	2.0	1.5	3.0	1.7
1.0	6.0	1.0	2.0	2.5
1.0	5.0	1.0	2.0	2.0
1.0	4.0	1.0	2.0	1.9
1.2	3.0	1.0	1.75	1.3
2.5	8.0	2.4	5.0	3.9
1.0	7.0	2.0	5.0	3.3
1.0	0.6	0.5	1.5	1.4
0.75	0.5	0.5	1.5	1.3
0.05	0.7	0.5	1.8	1.4
5.0	2.0	10.0	10.0	6.6
4.0	2.0	3.0	15.0	5.2
5.0	5.0	10.0	2.5	5.3
5.0	5.0	10.0	2.0	4.8
6.0	15.0	1.0	1.0	5.0

TABLE 10

The "O" Level Bridging Programmes 1982/83*

Breakdown per subject and Centres

SUBJECT	MANZINI	MBABANE	MELANGANO	TOTAL
English Language	173	90	100	363
English Literature	44			44
Siswati	44		31	75
History	28			28
Geography	50			50
Human and Social Biology	43	46	44	133
Biology	31			31
Mathematics	85	44	32	161
Principles of Accounts	47	30	20	97
Commerce	50		29	79
Economics			15	15
Bible Knowledge		20	17	37
Total	597	230	288	1113

*It is important to note that while these figures represent a drop in the number of centres from the previous year, the number of participants has risen.

Source: Division of Extra-Mural Services, University of Swaziland, Annual Report, 1982/83, P. 9.

Table 11

Comparison of the "O" Level Bridging Programmes between DEMS and Emlalatini by enrolment levels for 1981.

	DEMS	EMLALATINI
English Language	332	47
Mathematics	179	18
Human and Social Biology	124	32
Geography	56	3
Bible Knowledge	13	3
Food and Nutrition	0	3
English Literature	104	4
Principles of Accounts	75	26
Siswati	62	9
Commerce	77	9
General Housecraft	0	2
History	35	0
Chemistry	7	0
Economics	10	0
General Science	13	0

It is clear that the University's DEMS is providing far more than the Emlalatini Development Centre.

Source: Division of Extra-Mural Services, University of Swaziland Annual Report 1980/81 pp. 6 and 7.